Pizza Shop Owner

Performance Task

Introduction

Americans love pizza so much that they eat about 350 slices of pizza per second! In this task, you will be opening a pizza shop in your local town. You are not the only pizza place in town so you want to make sure your shop stands out from the rest. In addition to making different types of pizzas, advertising and customer service will play a role in getting and retaining customers and running a profitable business. Most importantly, you will need to find a way to deliver your pizzas in the most efficient way while also keeping the product hot and tasty!

Big Idea / Essential Questions

Big Idea

- Algebraic representations are used to communicate and generalize patterns in mathematics.
- Rational numbers can be represented in multiple ways.
- The coordinate plane can be used to model and compare numerical patterns.

Essential Questions

- How can patterns help us problem solve?
- How is computation with rational numbers similar or different to whole number computation?
- How can graphing points on the coordinate plane help to solve real world and mathematical problems?

G.R.A.S.P.

Goal

Your goal is to open a pizza shop in your local town that will be unlike the existing â€˜traditionalâ€™ pizza shops in your community.

Role

You are a pizza connoisseur who wants to open a Pizza Shop specializing in unique toppings, crust styles or shapes/sizes of pies.

Audience

Your audience is the local community which will be potential customers to your pizza shop.

Situation

You love pizza and so do the vast majority of people in your community. You want to open a pizza shop that is different than the other ones in your town. Since you are not the only pizza place in town, you want to make sure your shop stands out from the rest by having different types of toppings, crust styles or pies that come in uncommon shapes or sizes. In addition to making different types of pizzas, advertising and customer service will play a role in retaining customers and running a profitable business.

Products

1. Ingredients Budget

Your team will need to decide what types of pizzas you will be making. Research different types of crusts and toppings that are currently available and popular, What toppings will you have available? Will you have anything different than the ones normally at other pizza shops? Once you have decided, create a chart of all of the different ingredients you will need for the crust and toppings. Research the price for each and list it in the chart.

Assuming that you will be selling 100 pizzas a week, determine how much of these ingredients you will need to buy and the price of each as well as your total ingredient cost. Be sure that your chart is neat and clear to make it easy to read for the person who will be ordering all of the ingredients for your shop.

- What ingredients make up a pizza?
- What will make some of your pizzas unique?
- What are the most popular toppings?
- How much of each topping should you buy for a week?

Ingredients Budget

Achievement Levels	1	2	3	4
Chart Content (x1)	Few sections of the chart are correctly spelled and complete with appropriate labels and units.	Some sections of the chart are correctly spelled and complete with appropriate labels and units.	Most sections of the chart are correctly spelled and complete with appropriate labels and units.	All sections of the chart are correctly spelled and complete with appropriate labels and units.
Multiplying Fluently (x1)	Few multiplication calculations are correctly shown using an appropriate algorithm.	Some multiplication calculations are correctly shown using an appropriate algorithm.	Most multiplication calculations are correctly shown using an appropriate algorithm.	All multiplication calculations are correctly shown using an appropriate algorithm.
Decimal Operations (x1)	Product shows little correct work and solutions when performing operations with decimals.	Product shows some correct work and solutions when performing operations with decimals.	Product shows most correct work and solutions when performing operations with decimals.	Product shows all correct work and solutions when performing operations with decimals.
Research (x1)	Product shows that little research was done around the topic.	Product shows that some research was done around the topic.	Product shows that research was done around the topic.	Product shows that thorough research was done around the topic.

2. Pricing Chart & Graph

You need to determine the sizes of the pizzas you will have available for purchase. Will you have 3 sizes or more? Will they all be round or will they be different shapes?

Once you have decided on the sizes, estimate how much it will cost you to make a cheese pizza (this is your base price). To attract more customers, you decided to mark up the price to the customer by 5 1/4 times, which is a bit less than the average mark-up in the US.

Now you need to determine how much to charge for extra toppings. Will the extra toppings cost more on the bigger pizzas? Once you have decided your base price and toppings price, complete a table for each size of pizza you will offer (a sample is below).

Small pizza: Base price $6 Each additional topping cost $1.50	
Number of Toppings	**Price**
0	$6
1	$7.50
2	$9

To make this pricing more visual, you will graph each set of data on the same coordinate using a different color for each size of pizza.

- How many different sizes of pizzas will you have available?
- How will you determine how much of each topping you will need for each size?
- How will you determine the cost per additional topping?

Pricing Chart

Achievement Levels	1	2	3	4
Multiplication with Fractions (x1)	Product shows minimal correct work and solutions when multiplying fractions and mixed numbers.	Product shows some correct work and solutions when multiplying fractions and mixed numbers.	Product shows most correct work and solutions when multiplying fractions and mixed numbers.	Product shows all correct work and solutions when multiplying fractions and mixed numbers.
Numerical Patterns (x1)	Product shows limited correct numerical rules and corresponding work. Few of the terms are displayed correctly in a function chart.	Product shows some correct numerical rules and corresponding work. Several of the terms are displayed correctly in a function chart.	Product shows most correct numerical rules and corresponding work. Many of the terms are displayed correctly in a function chart.	Product shows most correct numerical rules and corresponding work. Many of the terms are displayed correctly in a function chart.
Decimal Operations (x1)	Few of the calculations with decimals are correct, shown and labeled.	Some of the calculations with decimals are correct, shown and labeled.	Most of the calculations with decimals are correct, shown and labeled.	All calculations with decimals are correct, shown and labeled.
Chart Content (x1)	Graph is minimal in accuracy and contains few essential elements such as a title, units and labels.	Graph is somewhat accurately constructed and contains some essential elements such as a title, units and labels.	Graph is adequately constructed and contains most essential elements such as a title, units and labels.	Chart is accurately constructed and contains all essential elements such as a title, units and labels.

3. Pizza Box Model

Your pizzas must be able to be delivered or available for take out. Since your sizes may be different than traditional pizzas, you will need to create boxes for the pies to be carried in. You want to make sure the pizza fits flat, but doesn't have a lot of extra room so it doesn't slide around and ruin the pizza.

You will first create a drawing of each of the pizza boxes you will need for the various sizes of pies. What dimensions will your various pizza boxes need to be? Express these dimensions in both inches and feet. What will the volume of these boxes be?

You may also choose to create a 3-D model using software, cardboard, or other materials for at least one of your pizza boxes. Be sure to include your Pizza Shop's name and logo neatly and creatively on the top of the box.

- What shape will your pizza boxes be?
- How can you make sure your pizza won't slide around in the box when carried?
- How can you draw a 3-D picture of your box with paper and pencil?

Pizza Box Model

Achievement Levels	1	2	3	4
Drawing Details (x1)	Drawings show minimal attention to detail in construction and synthesis of geometric figures to create the products.	Drawings show some attention to detail in construction and synthesis of geometric figures to create the products. They can be used to create a 3D of at least one box.	Drawings show satisfactory attention to detail in construction and synthesis of geometric figures to create the products. They can be used to create 3D models of most boxes.	Drawings show great attention to detail in construction and synthesis of geometric figures to create the products. They can be easily used to create 3D models of all boxes.
Model (x1)	The model is a minimally accurate reproduction of one of the drawings.	The model is a somewhat accurate reproduction of one of the drawings. It has limited attention to detail and includes the shop's name or logo.	The model is a mostly accurate reproduction of one of the drawings. It has some attention to detail and includes the shop's name and logo.	The model is an accurate reproduction of one of the drawings. It has great attention to detail and includes the shop's name and logo.
Volume (x1)	Product correctly shows the volume of few of the boxes along with limited to no correct calculations and units.	Product correctly shows the volume of some of the boxes along with some correct calculations and units.	Product correctly shows the volume of most of the boxes along with most correct calculations and units.	Product correctly shows the volume of all of the boxes along with all correct calculations and units.
Unit Conversion (x1)	Product shows few measurements were correctly converted to another unit.	Product shows some measurements were correctly converted to another unit showing limited calculations and units.	Product shows most measurements were correctly converted to another unit showing some correct calculations and units.	Product shows all measurements were correctly converted to another unit showing all correct calculations and units.

4. Menu

You will need to create a new menu for your pizza shop. The front of your menu should include the name of your pizza shop, a logo and a catchy slogan. Your menu needs to include information about the types and sizes of pizza available, Be sure to include a list of all the sauces and toppings that can be ordered along with the prices.

It would be helpful to create a brief description for each type of sauce or crust offered. Be sure to use adjectives to describe the items which hopefully will help persuade the customer to order the items.

- How will you make your menu eye catching, and easy to read?
- What will your pizza shop be called and what is the logo and slogan to attract customers?
- What descriptions will you use on your menu to describe the pizza options?

Menu

Achievement Levels	1	2	3	4
Menu Design Focus (x1)	The menu lacks visual appeal and has minimal focus on the uniqueness of the menu items.	The menu is somewhat visually appealing with partial focus on the uniqueness of the menu items.	The menu is visually appealing with adequate focus on the uniqueness of the menu items.	The menu is visually appealing with a strong focus on the uniqueness of the menu items.
Mechanics (x1)	The product contains numerous spelling and grammar errors and issues with sentence structure.	The product contains some spelling and grammar errors with complete sentences that keep audience interest.	The product contains minimal spelling and grammar errors with complete sentences that keep audience interest.	The product is free of spelling and grammar errors with complete sentences that keep audience interest.
Organization (x1)	The content is unorganized, making it hard for the viewer to read and understand.	The content is partially organized and the viewer can read and understand some of it.	The content is organized, making the menu able to be read and understood by the viewer.	The content is very well organized, making the menu easy for the viewer to read and understand.
Menu Content (x1)	Menu contains few necessary items including a title and logo related to the theme and descriptive explanations of each menu item.	Menu contains some necessary items including a title and logo related to the theme and descriptive explanations of each menu item.	Menu contains most necessary items including a title and logo related to the theme and descriptive explanations of each menu item.	Menu contains all necessary items including a title and logo related to the theme and descriptive explanations of each menu item.
Pricing and Decision Making (x1)	Menu prices included on each item reflect little awareness that cost can be a positive or negative incentive for customers thinking about coming to the pizza shop.	Menu prices included on each item reflect some awareness that cost can be a positive or negative incentive for customers thinking about coming to the pizza shop.	Menu prices included on each item reflect adequate awareness that cost can be a positive or negative incentive for customers thinking about coming to the pizza shop.	Menu prices included on each item reflect strong awareness that cost can be a positive or negative incentive for customers thinking about coming to the pizza shop.

5. Jingle

In order to compete with other pizza shops in the area, you want your shop to stick out from the rest. One way of doing this is to create a jingle that will stick in people's heads. The jingle should be no more than 30 seconds in length and should include the name, slogan and phone number of your pizza shop. This jingle will be played on local radio and TV stations as well as on your Facebook Business page and website. Record your jingle using an app, software, or a video. Be sure to have background music and lyrics that people will remember. Be creative and have fun!

- What will be the name and slogan of your pizza shop?
- What makes an advertisement effective?
- Why is music important in advertising?
- What makes a jingle/song memorable?

Jingle

Achievement Levels	1	2	3	4
	Jingle is minimally effective	Jingle is somewhat effective	Jingle is mostly effective	Jingle is effective because it

Achievement Marketing Levels (x1)	1 because it vaguely addresses a prospective customer/audience and shares little information about the business.	2 because it partially addresses a prospective customer/audience and shares some information about the business.	3 because it addresses a prospective customer/audience and shares critical information about the business within the 30 seconds.	4 addresses a well-defined customer/audience and shares critical information about the business within the 30 seconds.
Persuasive Advertisement (x1)	Jingle demonstrates a poor choice in music and/or includes limited information.	Jingle demonstrates a fair choice in music and includes some information in a way that potential customers can remember.	Jingle demonstrates a good choice in music and includes most information in a way that potential customers can easily remember.	Jingle demonstrates an excellent choice in music and includes crucial information in a way that potential customers can easily remember.
Creativity and Innovation (x1)	Product demonstrates little use of creative and innovative thinking in the jingle music and words.	Product demonstrates some use of creative and innovative thinking in the jingle music and words.	Product demonstrates adequate use of creative and innovative thinking in the jingle music and words.	Product demonstrates strong use of creative and innovative thinking in the jingle music and words.
Jingle Mechanics (x1)	The lyrics of the jingle are minimally clear or understandable. Volume and speed of the jingle are ineffective.	The lyrics of the jingle are somewhat clear and understandable. Volume and speed of the jingle are fair.	The lyrics of the jingle are mostly clear and easy to understand. Volume and speed of the jingle are adequate.	The lyrics of the jingle are clear and easy to understand. Volume and speed of the jingle allow for easy listening.

6. Facebook Business Page

Your company's Facebook page will be the online location that people can go to learn about the pizza shop and keep updated on specials and happenings. This will be a great place to put the pizza shop's name, slogan, and jingle. Be sure to inform people about your app and the ability to order online using this app. Include pictures of the menu and include the prices of the different types and sizes of pies as well as the toppings. Have fun with this page and create an innovative design that excites and persuades customers while providing them valuable information. Be sure to tell your customers about your fresh and hot speedy delivery service!

- What photos will you share on your Facebook page about your pizza shop?
- What are some special deals you could possibly share on Facebook?
- How can you explain why your pizza shop is different than others in the area?

Facebook Business Page

Achievement Levels	1	2	3	4
Conventions (x1)	The Facebook page contains a large number of errors of spelling, grammar, punctuation, capitalization, and sentence structure.	The Facebook page contains a number of errors of spelling, grammar, punctuation, capitalization, and sentence structure..	The Facebook page contains few errors of spelling, grammar, punctuation, capitalization, and sentence structure.	The Facebook page contains no errors of spelling, grammar, punctuation, capitalization, and sentence structure.
Facebook Page Layout (x1)	The Facebook page does not use fonts and attributes which make the webpage easier to read. The webpage incorporates some color and background as part of the layout.	The Facebook page uses fonts and attributes which can sometimes be difficult to read. The webpage incorporates some color and background to make the layout more appealing.	The Facebook page employs fonts and attributes which makes the webpage easy to read with a complimentary background, color, and layout to provide visual appeal.	The Facebook page employs a deep knowledge of fonts and attributes making the webpage very reader friendly. The webpage is visually enhanced through the artful use of background, color, and layout.
Advertisement (x1)	Product is a limited advertisement for the pizza shop.	Product is somewhat thorough, unique, and appealing advertisement for the pizza shop.	Product is mostly thorough, unique, and appealing advertisement for the pizza shop.	Product is a thorough, unique, and appealing advertisement for the pizza shop.

Achievement Levels	1	2	3	4
Creativity (x1)	Product reflects minimal creative thinking through the choice of language, graphics and media selected to enhance viewer understanding of the pizza shop uniqueness and menu.	Product reflects some creative thinking through the choice of language, graphics and media selected to enhance viewer understanding of the pizza shop uniqueness and menu.	Product reflects an adequate degree of creative thinking through the choice of language, graphics and media selected to enhance viewer understanding of the pizza shop uniqueness and menu.	Product reflects a high degree of creative thinking through the choice of language, graphics and media selected to enhance viewer understanding of the pizza shop uniqueness and menu.

7. Application Programming Flowchart

Your team will be creating an app for your pizza shop so people can order their pies online and pick them up in your shop.

Create a sketch of your app and what will be included. Be sure to come up with a unique name, icon and a short description that will show up in the App Store.

Using software or by hand, create a programming flowchart in the form of a diagram that will be sent to a software engineer who will be developing the app. The flowchart should include a start point and an endpoint, decisions that need to take place along the way, the direction for the flow of logic and processes. You will need to use symbols to represent the actions and decisions the users of your app will take. You may find it helpful to research a flowchart for an existing app as practice.

These websites may be helpful:

- 10 Flowchart Examples for Students
- Flowchart Tutorial

- What will be the title and design of your app?
- What sections will your app have?
- How can you make your app user-friendly for everyone?
- What is a decision tree and how is it helpful when developing an application or website?
- Why is building a flowchart an important step before developing an application or website?

App Programming Flowchart

Achievement Levels	1	2	3	4
Decision Making (x1)	The flowchart is missing elements that should have been considered for selecting a final end-state. Poorly communicates the final end-state selection process.	The flowchart is missing elements that should have been considered for selecting a final end-state.	The flowchart somewhat effectively demonstrates important considerations and the process that contributes to selecting a final end-state.	The flowchart effectively demonstrates important considerations and the process that contributes to selecting a final end-state.
Layout (x1)	The flowchart is cluttered looking or confusing. It is often difficult to locate important elements.	The flowchart has a usable layout, but may appear busy or boring. It is easy to locate most of the important elements.	The flowchart has an attractive and usable layout. It is easy to locate all important elements.	The flowchart has an exceptionally attractive and usable layout. It is easy to locate all important elements. White space, graphic elements and/or alignment are used effectively to organize material.
Logic (x1)	There is no logic to the flowchart. The flow chart has no order and is hard to understand.	The flowchart is present but there is a question as to which step goes in which order.	The flowchart is logical and the directions allow the reader to complete the task.	The flowchart is logical and the directions help the reader to efficiently complete the task.

Achievement Levels	1	2	3	4
Spelling and Grammar (x1)	Several spelling or grammar errors	No more than 3 spelling or grammar errors.	No more than a couple of spelling or grammar errors.	No spelling or grammar errors.